

## Claims

[c1] 1. A method of producing a molecularly-imprinted material, comprising:

- (a) synthesizing a peptide, oligosaccharide or oligonucleotide on a disposable surface modified support to produce a support surface-attached peptide, oligosaccharide or oligonucleotide;
- (b) providing a selected monomer mixture;
- (c) contacting said monomer mixture with said support surface-attached peptide, oligosaccharide or oligonucleotide;
- (d) initiating polymerisation or at least one crosslinking reaction;
- (e) dissolving or degrading said support surface-attached peptide, oligosaccharide or oligonucleotide and said support; and
- (f) obtaining said molecularly imprinted material.

[c2] 2. A method according to claim 1, wherein said peptide of step (c) is a peptide epitope.

[c3] 3. A method according to claim 1, wherein step (f) is conducted with the aid of at least one factor consisting of crosslinking agents, heat, and ultraviolet irradiation.

[c4] 4. A method according to claim 1, wherein said peptide is selected from the group consisting of FMOC-Phe-Gly-Si, H-Phe-Gly-Si, FMOC-Phe-Si, BOC-Gly-Si, H-Gly-Si, FMOC-Phe-Gly-OH, FMOC-Phe-OH, BOC-Phe-OH, H-Phe-pNA, H-Phe-O-Me, H-Phe-OtBu, BOC-Gly-OH, H-Phe-Gly-NH<sub>2</sub>, H-Phe-Gly-Gly-Phe-OH, FMOC-Phe-OH, H-Gly-Phe-OH, and Nociceptin.

[c5] 5. A method according to claim 1, wherein said disposable surface activated support is a silane-modified silica or controlled pore glass (CPG).

[c6] 6. A method according to claim 1, wherein said monomer mixture comprises monomers selected from the group consisting of styrene/divinyl benzene, methacrylates, acrylates, acrylamides, methacrylamides and combinations thereof.

[c7] 7. A method of using a molecularly-imprinted material, comprising:  
producing a molecularly-imprinted material according to claim 1; and  
using said molecularly-imprinted material as an affinity phase for the separation of biological macromolecules or oligomers.

[c8] 8. A method according to claim 7, wherein said biologi-

cal macromolecules or oligomers are selected from the group consisting of peptides, polypeptides, oligopeptides, proteins, nucleic acids, oligonucleotides, polynucleotides, saccharides, oligosaccharides, and polysaccharides.

[c9] 9. A chromatographic stationary phase, comprising a molecularly imprinted material produced according to claim 1, wherein said peptide, oligosaccharide or oligonucleotide of step (c) is selected from the group consisting of FMOC-Phe-Gly-Si, H-Phe-Gly-Si, FMOC-Phe-Si, BOC-Gly-Si, H-Gly-Si, FMOC-Phe-Gly-OH, FMOC-Phe-OH, BOC-Phe-OH, H-Phe-pNA, H-Phe-O-Me, H-Phe-OtBu, BOC-Gly-OH, H-Phe-Gly-NH<sub>2</sub>, H-Phe-Gly-Gly-Phe-OH, FMOC-Phe-OH, and H-Gly-Phe-OH.